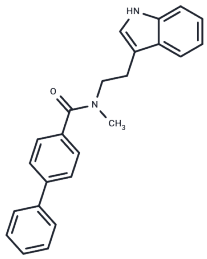
Data Sheet (Cat.No.T61266)

TargetMol

CA224

Chemical Properties



CAS No. : 883561-04-4

Formula: C24H22N2O

Molecular Weight: 354.44

Storage: Powder: -20°C for 3 years | In solvent: -80°C for 1 year
Actual storage temperature shall be subject to the COA.

Biological Description

Description	CA224 (Compound 1), an orally active and selective Cdk4-cyclin D1 inhibitor, demonstrates an IC50 of 6.2 μM. It induces cell apoptosis and exhibits antitumor activity [1].
Targets(IC50)	Apoptosis,Others,CDK
In vitro	CA224 (Compound 1) demonstrates significant antiproliferative activity against various human cancer cell lines, effectively inhibiting cancer cell growth at critical phases (G0/G1 and G2/M) of the cell cycle and exhibiting selective cytotoxicity towards SV40 large T-antigen transformed mouse embryonic liver cells (BNL SV A.8). Additionally, CA224 disrupts tubulin dynamics by inhibiting polymerization and promoting the depolymerization of stable tubulin proteins, further contributing to its anticancer efficacy. The compound also triggers apoptosis in cancer cells over a range of concentrations and time periods. Notably, CA224 interferes with the activity of several cytochrome P450 enzymes, including CYP3A4, CYP2D6, CYP2C9, and CYP2C19, demonstrating varied levels of inhibition. Through detailed cell proliferation assays, CA224 has been shown to have significant IC50 values against a broad panel of cancer cell lines, supporting its potential as a therapeutic agent. Cell cycle analysis reveals its capacity to induce a substantial G2/M block and apoptosis, with Western Blot analysis confirming its influence on key cell cycle and apoptosis regulators.
In vivo	CA224 (Compound 1), at a dosage of 100 mg/kg administered intraperitoneally (i.p.) once daily for nine days, demonstrated significant inhibition of tumor growth in severe combined immunodeficient (SCID) mice models without notable toxicity. These mice were specifically used for subcutaneous injection of HCT-116 in male specimens weighing 18-25 g and 6-8 weeks old, and NCI-H460 in female specimens weighing 15-24 g of the same age. The study found no significant loss in body weight, indicating the compound's efficacy and safety. In another part of the research involving BALB/c mice, CA224 was tested for its pharmacokinetic properties through oral administration (10 mg/kg) and intravenous injection (1.0 mg/kg), revealing specific pharmacokinetic parameters including half-life (t 1/2,β), area under the curve (AUC) for both immediate and extended timelines, maximum concentration (C max), volume of distribution (V d), steady-state volume of distribution (V dss), and clearance rate (CL). Intravenous administration showed a half-life of 0.33 hours, while oral administration had a longer half-life of 1.16 hours, among other differentiated parameters, indicating a bioavailability of 9.6%. This comprehensive study highlights CA224's potential as an

In vivo	effective anti-cancer agent with manageable pharmacokinetic properties.

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.8214 mL	14.1068 mL	28.2135 mL
5 mM	0.5643 mL	2.8214 mL	5.6427 mL
10 mM	0.2821 mL	1.4107 mL	2.8214 mL
50 mM	0.0564 mL	0.2821 mL	0.5643 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.